A New Combination in *Clinopodium* (Lamiaceae) from Mesoamerica and Cuba

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ABSTRACT. *Micromeria brownei* var. *ludens* Shinners is recognized at the rank of species and transferred to *Clinopodium* L. Shinners distinguished variety *ludens* from other *M. brownei* (Swartz) Bentham based on its "hispid-ciliate" calyx teeth. While this character seems to be variable over the entire geographic range of *C. brownei* (Swartz) Kuntze, *C. ludens* (Shinners) A. Pool is unique in possessing narrowly ellipsoid nutlets, which are apically rostrate, supporting its recognition at the species level. The generic transfer from *Micromeria* Bentham to *Clinopodium* follows the molecular and morphological studies of Cantino and Wagstaff. *Clinopodium ludens* is currently known from Pinar del Río Province of Cuba, the Yucatán and Quintana Roo states of Mexico, and the Atlántida Department of Honduras.

Key words: *Clinopodium*, Cuba, Lamiaceae, Mesoamerica, *Micromeria*, *Satureja*.

Treatment of New World species sometimes included in *Micromeria* Bentham has been a subject of great controversy. Some 20th-century botanists, such as Epling (1940, 1964), Epling and Játiva (1966), Adams (1972), and Standley and Williams (1973), have treated these species within a very broad concept of *Satureja* L., in Epling (1964) and Epling and Játiva (1966) within sections *Hesperothymus* (Bentham) Briquet and *Xenopoma* (Willdenow) Briquet; Shinners (1962) and Morales (1993) placed these species in *Micromeria*, in Morales (1993) in sections *Hesperothymus* Bentham and *Xenopoma* (Willdenow) Bentham. Doroszenko (1985) divided *Satureja* s.l. into 17 genera, with *Satureja* s. str. and *Micromeria* s. str. restricted to the Old World, and the New World species of *Micromeria* treated at the genus level as *Xenopoma* Willdenow and, based on *Micromeria* sect. *Hesperothymus*, "Hesperothymus (Bentham) Doroszenko" (unpublished name; Doroszenko, 1985: 407). Wagstaff et al. (1995) included representatives of nine of the 17 genera recognized by Doroszenko (1985) in their cladistic analysis of chloroplast DNA restriction site data in subfamily Nepetoideae, including *Satureja* s. str., *Micromeria* s. str., and *Micromeria* sect. *Hesperothymus*. They found that most of the genera composing *Satureja* s.l. fell into an unresolved polytomy, which also included such distinctive genera as *Monarda* L. and *Monardella* Bentham, but excluded *Satureja* s. str. and *Micromeria* s. str., making it impossible, on cladistic grounds, to accept a broad concept of *Satureja* or *Micromeria* without submerging *Monarda* and *Monardella*. Cantino and Wagstaff (1998) reexamined the species of *Satureja* s.l. in light of the molecular study (Wagstaff et al., 1995) in combination with some herbarium studies and concluded that *Satureja* and *Micromeria* should be treated more narrowly and restricted to the Old World. Cantino and Wagstaff (1998) considered, based on morphological study, recognition of the other genera proposed by Doroszenko, but concluded that for the New World, only the monotypic genus *Obtegomeria* Doroszenko & P. D. Cantino of South America could be recognized; the other groups lack probable synapomorphies, intergrade by way of intermediate species, or both (Cantino & Wagstaff, 1998). While suggesting that more molecular work is needed to fully resolve the relationships in this group, they proposed that the remaining New World species should be treated as *Clinopodium* and provided a list of accepted names, with some synonymy, for the North American species. Harley and Granda (2000) provided a similar list for the tropical American species.

Clinopodium brownei (Swartz) Kuntze and *C. douglasii* (Bentham) Kuntze have generally been placed together, sometimes under or with synonyms (and sometimes additional taxa) in *Micromeria* sect. *Hesperothymus* (Bentham, 1834; Morales, 1993), *Satureja* sect. *Hesperothymus* (Briquet, 1896; Epling & Játiva, 1966), or "Hesperothymus" (Doroszenko, 1985), based, when indicated, on the long pedicels (Bentham, 1834) or the habit (herbaceous, prostrate or repent) and the flowers borne on long pedicels or peduncles and usually solitary in the leaf axils (Epling & Játiva, 1966; Doroszenko, 1985), characters also found in the proposed *C. ludens* (Shinners) A. Pool. Cantino and Wagstaff (1998) hypothesized recognition of the section *Hesperothymus* of *Micromeria* at the genus level with possible synapomorphies: prostrate

herbaceous habit, solitary long-pedunculate flowers, and broadly ovate to subrotund leaves. They compared *Micromeria* sect. *Hesperothymus* to Doroszenko's generic concept of *Xenopoma* (Doroszenko, 1985), which included the unpublished transfer of the species *S. ganderi* Epling (Doroszenko, 1985: 429), and found *S. ganderi* (= *Clinopodium ganderi* (Epling) Govaerts) to be a "bridge" (Cantino & Wagstaff, 1998: 67) between Doroszenko's concepts of "Hesperothymus" and *Xenopoma*, as it has leaves that resemble those of "Hesperothymus" and flowers that are sometimes long-pedunculate and solitary in the leaf axils, but is a shrub, as are most species of *Xenopoma*. The only remaining synapomorphy for Doroszenko's "Hesperothymus" would be the prostrate herbaceous habit, and this is found in other species recognized by him as *Xenopoma* (Doroszenko, 1985: 421), e.g., *S. tenella* Epling (= *Clinopodium tenellum* (Epling) Harley) (Cantino & Wagstaff, 1998). This led Cantino and Wagstaff (1998) to hypothesize that Doroszenko's "Hesperothymus" arose within *Xenopoma* and that to recognize it at the genus level would render *Xenopoma* paraphyletic. Doroszenko (1985) admitted that his ined. "Hesperothymus" was weakly defined at the genus level and did not strongly endorse this interpretation. Additionally, Doroszenko's phenogram 9 (1985: 512) shows the species he recognized in three separate genera, *Xenopoma*, *Diodeilis* Rafinesque, and his ined. "Hesperothymus," to be totally intermingled. Therefore, it seems best at this time to follow the leads of Cantino and Wagstaff (1998) and Harley and Granda (2000), accept the generic placement of *C. brownei*, and transfer the similar *M. brownei* var. *ludens* Shinners to *Clinopodium*.

Clinopodium ludens (Shinners) A. Pool, comb. et stat. nov. Basionym: *Micromeria brownei* (Swartz) Bentham var. *ludens* Shinners, Sida 1: 96. 1962. TYPE: Cuba. Prov. Pinar del Río: wayside near Sabicú, Rangel, Sierra del Rosario, Jan. 1957, *Bro. Alain [Liogier] 6137* (holotype, NY).

Clinopodium ludens is similar to *C. brownei* in many aspects: they are both trailing to ascending, rhizomatous herbs with broadly ovate leaves, with floral cymes reduced to a single flower (or rarely two in *C. ludens*), the peduncle not developed, and the bractlet absent. In addition, they have flowers with the calyx tubes and teeth similar in size and shape, both with tubes internally annulate at the mouth, and corollas similar in shape and color. However, in the course of examining material of *C. brownei* for the Flora Mesoamericana Project, I noted that specimens from the Yucatán and Atlantic Honduras have a longer and narrower fruiting calyx than material from other areas, and the nutlets of these specimens are narrowly ellipsoid with a broad, dorsal-ventrally compressed apical rostrum, quite different in appearance from all other nutlets of *C. brownei*, which are broadly obloid with a rounded apex. They also differ from *C. brownei*, as represented in Mesoamerica, by having longer petioles (3–15 mm vs. 0.5–3 mm), shorter pedicels (1.75–5 mm vs. 5–15 mm), corolla tubes equal in length or shorter than the calyx (vs. longer than the calyx), and the calyx teeth strongly ciliate (vs. glabrous to ciliate). While these last characters vary over the geographic range of *C. brownei* as currently, if somewhat unsatisfactorily, delineated by Pool in an upcoming volume of *Flora Mesoamericana* (southeastern United States, Mexico, Guatemala, Colombia, Venezuela, Ecuador, Brazil, Paraguay, the Bahama Islands, Jamaica, and Hispaniola), these differences, in addition to the very distinctive nutlets, support recognition of *C. ludens* at the species level. *Clinopodium ludens* is currently known from Pinar del Río Province of Cuba, the Yucatán and Quintana Roo states of Mexico, and the Atlántida Department of Honduras. It is also grown in home gardens in Quintana Roo (*Pulido & Serralta 650*, MEXU) and Yucatán, where it is sometimes referred to as "poleo" (*Ankli AANK044*, MEXU), and where it is used medicinally (*Vargas & Sima 350*, MEXU). In addition, it is grown in Honduras by the Xicaques de la Montaña de La Flor (*Molina 3020*, F) and in hanging baskets (*Standley & Chacón 7177*, F).

Recognition of this taxon was first suggested by Hemsley (1887: 107), who added *Micromeria brownei* "forma calyce angustiore" to the Supplement of *Biologia Centrali-Americana* based on F. Gaumer's (s.n., BM) collection from Cozumel Island, located off the coast of the Yucatán. Shinners described *M. brownei* var. *ludens* in 1962, with the holotype from Cuba, one paratype from Cuba, and two paratypes from the Yucatán (all examined in the course of this study). He distinguished it from typical *M. brownei* (which Shinners recognized as endemic to Jamaica) and *M. brownei* var. *pilosiuscula* A. Gray (treated by Shinners from the southeastern United States, Mexico, and Guatemala, and treated by Pool, in an upcoming volume of the *Flora Mesoamerica*, as a synonym of *Clinopodium brownei*) by its "hispid-ciliate" calyx teeth (Shinners, 1962: 94) with hairs 0.3–0.6 mm long, versus calyx teeth glabrous to ciliate with hairs about 0.1 mm long. Neither Epling and Játiva (1966) nor Doroszenko (1985) mention either *M. brownei* var. *ludens* or *M. brownei* "forma calyce angustiore" (Hemsley, 1887: 107).

KEY SEPARATING *CLINOPODIUM LUDENS* FROM MESOAMERICAN REPRESENTATIVES OF *C. BROWNEI*

1a. Nutlets broadly obloid, width more than half length, non-rostrate; petioles 0.5–3 mm; pedicels 5–15 mm; corolla tube longer than calyx . . . . *C. brownei*

1b. Nutlets narrowly ellipsoid, width less than half length, apically rostrate, the rostrum dorsal-ventrally compressed; petioles 3–15 mm; pedicels 1.75–5 mm; corolla tube equaling or shorter than calyx . . . . *C. ludens*

Additional specimens examined. CUBA. Santiago de las Vegas Habana, cultivated Est. Exp. Agronomica, *J. Acuna 19539* (NY). HONDURAS. **Atlántida:** Lancetilla Valley, near Tela, *P. C. Standley 56830* (F, LA in UC, US). **Cortés:** Vic. of La Lima, planted in hanging basket, *P. C. Standley & J. Chacón 7177* (F). **Francisco Morazán:** Río Guarabuquí, terranos de los indios Xicaques de la Montaña de La Flor, planta tendida, *A. Molina 3020* (F). MEXICO. **Quintana Roo:** en el poblado de Subteniente López, en casa habitación, *T. Pulido & L. Serralta 650* (MEXU); Cozumel Island, *G. F. Gaumer 109* (GH, NY); Cozumel Island, Caleta, *C. F. Millspaugh 1515* (F); Cozumel Island, San Miguel, *C. F. Millspaugh 1474* (F); Cozumel Island, rd. to Cedral, *C. F. Millspaugh 39* (F, GH). **Yucatán:** Izamal, *G. F. Gaumer 499* (F), *G. F. Gaumer s.n.* (F); Chichancanab, *G. F. Gaumer 1575* (F, GH, LA in UC, MO, US); Chikindzonot, house yard, *A. Ankli AANK044* (MEXU); en los alrededores de la zona arqueológica de Xlapac, a 27 km al SO de Oxkutzcab, *E. Cabrera & H. de Cabrera 9162* (MEXU, MO); Mun. Merida, en cultivo, *C. Vargas & P. Sima 350* (MEXU); near Merida, *P. Valdez 35* (BM, F, GH, MO, NY).

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